In the Drawings:

Applicant wishes to amend the drawings (i.e., Figs. 1, 2 and 4-7) and has provided marked-up drawings with the proposed changes in red ink. In Figs. 1 and 2, the term "time" on the x-axis has been replaced with the term "run time." Support for this term can be found in the specification at page 11, lines 9, 15 and 20. In Figs. 4-7, the abbreviation "N" on the y-axis has been replaced with "shear force [N]." This more specifically references as to what "N" refers. Support can be found in the specification at page 13, lines 3, 9 and 16. The abbreviations "mm" and "S" on the x-axis have been replaced with "distance [mm]." Applicant points out that the term "S" in the original drawings refers to "Strecke", which means "distance" in German. Therefore, amending the "S" on the x-axis to its present form is merely a translation of the German abbreviation into English.

Applicant also wishes to point out that there is an apparent discrepancy between the specification and the drawings. The specification, at page 13, refers to Figs. 4-7 as being "force time" diagrams. The original figures had the y-axis labeled "mm" for distance in millimeters. The figures, as amended, are now correctly labeled as "force distance." Moreover, the test samples referred to in Figs. 4-7 were sheared at a constant speed (2.5 mm min) while the force was measured. Therefore, in a general diagram, the time course of the shearing process could be indicated on the y-axis by either the time or the distance, as time and distance are proportionally related to one another. Applicant has amended the specification accordingly, as noted above, so that it is in agreement with the figures.

Lastly, any commas on the x and y axes in Figs. 1 and 3-7 are proposed to be changed to periods. In addition, "4.00" was added to the x-axis in Figs. 3-7.

Formal drawings will be submitted once the proposed amendments are approved by the Examiner. No new matter has been added to the figures.

REMARKS

The Office action dated November 6, 2002 is acknowledged. Claims 1-11 are pending in the instant application. According to the Office action, claims 1-11 have been rejected. By the present "Reply to First Office Action," claims 2 and 3 have been amended and they, claim 1 and remaining claims, are now believed to be allowable. Reconsideration is respectfully requested in light of the amendments being made herein and of the following remarks. No new matter has been added.

Rejection of claims 1-11 under 35 U.S.C. 112, first paragraph

The Examiner has rejected claims 1-11 under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in a manner to enable one skilled in the art to which it pertains to make and/or use the invention. Specifically, the Examiner points out the last paragraph of page 3 where the term "polyoxisiloxane" polymer is presented. The Examiner states that this term is unclear. Additionally, the Examiner points out that on page 3, paragraph 4, it is stated that the prior art polymers are one-component polymer solutions. The Examiner feels this is unclear and that the Applicant may have meant "the prior art polymers are not one-component polymers."

The term "polyoxisiloxan polymer" at page 3 was misspelled due to a clerical error and should read "polysiloxane polymer." This portion of the specification has been amended accordingly. Applicant submits that polysiloxane polymer is used throughout the specification and in the claims and one skilled in the art would readily recognize the former term as being a clerical error. Additionally, the Applicant points out that originally filed PCT

application used the correct term at that same passage. The Applicant respectfully requests withdrawal of this rejection.

Regarding the Examiner's assumption that the Applicant intended to state that the prior art polymers are not one-component polymers, the Applicant respectfully submits that the assumption is incorrect. The Applicant did in fact intend this passage to refer to prior art polymers which are one-component polymers. It was the Applicant's underlying aim of the present invention to improve the physical properties, i.e. cold flow, of these prior art silicone adhesives.

Rejection of claim 2 under 35 U.S.C. 112, second paragraph

The Examiner has rejected claim 2 under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the Applicant regards as the invention. The Examiner points out that claim 2 recites "wherein the metal additive" in claim 1, but there is insufficient antecedent basis in claim 1 for this recitation.

Applicant has amended both claims 2 and 3 to recite "metal ion," thereby allowing claim 1 to provide sufficient antecedent basis. This amendment is supported by the tables shown on pages 8-9 of the specification (first box in the tables, which recites "$^{0}/_{0}Al^{3+}$ (w/w)" and "$^{0}/_{0}$ Ti^{4+} (w/w)," respectively. From these tables, it is clear to one skilled in the art that the amount of metal additive is calculated on the metal ion(s), rather than on the complex of the metal ion. Applicant respectfully requests that this rejection be withdrawn.

Rejection of Claims 1-11 under 35 U.S.C. 102(e) or 103 (a)

Claims 1-11 have been rejected under 35 U.S.C. 102(e) as anticipated by, or in the alternative under 103(a) as being obvious over U.S. Patent No. 6,407,195 B2 (Sherman et al.). It is respectfully submitted that these claims are patentably distinct from this prior art reference.

The Examiner states that, regarding claims 1, 4, 7 and 8, Sherman et al. discloses a process for the production of polysiloxane pressure-sensitive adhesive (PSA) layers by means of coating and drying a one-component polysiloxane PSA solution onto a suitable flat-shaped carrier (col. 19, line 49 – col. 20, line 30), a complex of a metal ion of the group as instantly claimed, with a low-molecular organic complex former, i.e., titanium acetylacetone, added to the organic adhesive solution to be coated (col. 14, lines 35-47) and heating and/or drying of the adhesive (col. 23, lines 14-18). The Examiner also states that Sherman et al. appears to inherently disclose where the metal ion is only released from the bond to the complex former under the conditions of heating and or drying, and the organic complex former is substantially removed during drying. It is the Examiner's assertion that because the process of the Applicant is the same as that of Sherman et al., it is inherently disclosed that the same reaction would have occurred. The Examiner offers in the alternative that if not inherent, then it would have been obvious to one of ordinary skill in the art at the time the invention was made for the metal ion to be released from the bond to the complex former under the conditions of heating and or drying because the process and materials of Sherman et al. are at least similar to those of the Applicant, and at least similar materials in the same process would have been expected to yield at least similar results.

Regarding claims 2 and 3, the Examiner states that Sherman et al. teaches an amount of additive of up to about 10 percent by weight (col. 13, lines 41-46), which encompasses the instantly claimed range.

Regarding claim 5, the Examiner states Sherman et al. teaches the drying being carried out at a temperature of between 20 and 120°C (col. 23, lines 14-18).

Regarding claim 6, the Examiner states that Sherman et al. teaches the same materials and the same process as Applicant, as set forth above. The Examiner states that Sherman et al. discloses an adhesive thickness of 38μm at col. 23, lines 14-18, which, when coated with the same materials as Applicant, would yield a weight per unit area that is inherently included in the instantly claimed range of between 10 and 300 g/m^2.

Lastly, regarding claims 9-11, the Examiner states that Sherman et al. teaches the polysiloxane being substantially polydimethyl siloxane (col. 21, line 17 – col. 22, line 67), a free silanol and a medicinal patch having a layered structure, the structure having at least one layer of polysiloxane PSA produced by the means of claim 1 (col. 19, lines 49-60).

Applicant respectfully submits that the present claims are patentably distinguishable from Sherman et al. Specifically, each of the features of the claims are of the present invention, namely claim 1, are not provided in the prior art reference, as will be explained in greater detail below.

As the Examiner is well aware, the present invention concerns methods for producing polysiloxane-based pressure-sensitive adhesives which have improved physical properties, i.e., improved suppression of "cold flow." In the production methods of the present invention, one-component polymer solutions known in the prior art are used as a starting

material (rather than two or more component polymer solutions). These one-component prior art polysiloxane-based polymers are described in the present specification at page 3, paragraphs 2 – 7, as having the following characteristics: (1) they do not exhibit three-dimensional cross-linking (or only in microscopic dimensions), (2) they have a structure which is substantially linear not branched, (3) they are not intended for a two-component reaction in the course of their further processing (e.g., three-dimensional cross-linking), and (4) they are one-component polymer solutions. The process for the production of polysiloxane PSA layers, as provided in claim 1, requires that a metal ion complex is added to the organic adhesive solution before the steps of coating and drying take place. The PSA layers obtained by this method have unique properties, in particular, the cold flow phenomenon is reduced due to the addition of the metal ion.

Sherman et al. discloses various methods for producing polysiloxane PSA layers by using a special type of polydiorganosiloxane coploymer in combination with silicate resin(s) at col. 3, lines 33-42. Applicant submits that as these copolymers are linear (as shown in the formula at the top of col. 7) and that Sherman et al. proposed to use silane crosslinking agents to cross-link the copolymers (col. 13, lines 47-50). In addition, and as the Examiner stated in the Office action, Sherman et al. proposes adding alkyl titanates, such as titanium acetylacetonate (col. 14, lines 35-41). However, these substances are used as curing catalysts (col. 14, line 35) which promote the cross-linking reaction of the silane crosslinking agents mentioned above. Sherman et al. actually teaches against the use of curing catalysts such as titanium acetylacetonate, and it is preferred to select silane crosslinking agents which do not require the additional use of curing catalysts. (col. 14, lines 43-47). In other words, Sherman

et al. proposes to add titanium acetylacetonate only when the mixture contains a polysiloxane copolymer and silane crosslinking agents so that crosslinking may be promoted. These components are intended to react with each other in the further processing, in order to promote and facilitate the crosslinking of the copolymer molecules (col. 13, lines 47-49). Accordingly, a polymer solution which, according to Sherman et al., contains a polysiloxane copolymer and silane crosslinking agents does not represent a one-component polysiloxane PSA solution as defined in the present specification (i.e., page 3, lines 23-30) and in claim 1.

Applicant additionally submits that the language of claim 1 excludes polysiloxane coating solutions which contain a second component (such as a silane cross-linking agent described in Sherman et al.) which is capable of reacting with the polysiloxane polymers to produce a crosslinking or hardening curing effect. Because claim 1 specifically recites the use of a one-component polysiloxane solution while Sherman et al. teaches the use of a two-component solution, the reference cannot anticipate the present invention. Therefore, withdrawal of this anticipation rejection is respectfully requested.

Applicant turns now to the Examiner's position that if not inherent, it would be obvious to one of ordinary skill in the art at the time the invention was made for the metal ion to be released from the bond to the complex former under the conditions of heating and or drying because the process and materials of Sherman et al. are at least similar to those of the Applicant, and at least similar materials in the same process would have been expected to yield at least similar results. Applicant respectfully disagrees with this conclusion.

First, as noted above, Sherman et al. states that it is preferred to not employ curing catalysts such as titanium acetylacetonate (emphasis added). Sherman et al. acknowledges that crosslinking can be done by adding a suitable silane crosslinking agent and that crosslinking can be improved or promoted by the addition of such a suitable curing catalyst. However, Sherman et al. provides that it is preferred to select silane crosslinking agents that do not require the use of curing catalysts to avoid reducing shelf-life and adversely affect the physical properties of the vibration damping composition (col. 14, lines 43-47). Furthermore, Sherman et al. only discloses the combined addition of silane crosslinking agent and curing catalyst. The reference does not teach or suggest anywhere therein that it might be possible to add titanium acetylacetonate without first adding a silane crosslinking agent, i.e., adding it a one-component polysiloxane solution, and that this might lead to an improvement of the physical properties of the resulting adhesive layer. More specifically, Sherman et al. fails to teach or suggest that the addition of an organic metal complex might lead to a reduction of the cold flow phenomenon. The reference merely suggests that such an addition would promote crosslinking when the polysiloxane solution has already been combined with a silane crosslinking agent.

Accordingly, it is the Applicant's position that one skilled in the art would not have considered adding an organic metal complex such as titanium acetylacetonate to a one-component polysiloxane solution devoid of silane crosslinking agents, such as in the present invention. It is also the Applicant's position that one skilled in the art would never have expected that the addition of such complexes would have beneficial effects on the cold flow of a PSA layer produced in the manner of the present invention. Therefore, the Applicant

believes that the present invention would not be obvious to one skilled in the art because the beneficial effects would not have been expected or anticipated. Accordingly, withdrawal of this rejection is respectfully requested.

Lastly, with respect to claim 11, Applicant would like to point out that the PSA layer obtained by the process of the present invention is physically different from the adhesive layers disclosed in Sherman et al. The Examiner states that Sherman et al. discloses a medicinal patch having a layered structure and where the structure has at least one layer of a polysiloxane PSA produced by the means as claimed in claim 1. The Applicant respectfully disagrees with this for at least the above-noted deficiencies of Sherman et al. Simply put, the method of the present invention employs a one-component polysiloxane solution and that of Sherman et al. employs a two-component solution. Therefore, the means to produce the respective medicinal patches are different. Moreover, the patch of the present invention is advantageous over the prior art due to the reduction of cold flow. Accordingly, Applicant requests that this rejection be withdrawn.

Conclusion

For the foregoing reasons, it is respectfully submitted the present application is in condition for allowance, and such action is earnestly solicited. The Examiner is invited to call the undersigned if there are any remaining issues to be discussed which could expedite the prosecution of the present application.

Respectfully submitted,

By: _____
D. Peter Hochberg
Reg. No. 24,603

D. Peter Hochberg Co., L.P.A.
1940 E. 6th St. - 6th Floor
Cleveland, OH 44114-2294
(216) 771-3800

DPH sm